

AMENDMENT TO THE DRAWINGS

The attached one (1) replacement sheet of drawings and one (1) new sheet of drawings respectively include changes to Figures 1 and 2, and new Figure 4. The changes to Figures 1 and 2 include the addition of the label “Prior Art.”

Attachment: Replacement Sheet (1) and New Sheet (1)

REMARKS

The Office Action dated January 10, 2008, and the patents and publications relied on therein have been carefully reviewed, and in view of the above changes and following remarks reconsideration and allowance of all the claims pending in the application are respectfully requested.

Claims 1-14 stand rejected. By this Amendment, claim 15 has been restored for consideration on the merits, and one (1) replacement sheet of drawings and one (1) new sheet of drawings have been attached as an Appendix. Claims 1-15 are pending.

The Amendments To The Claims

Applicants has “un-withdrawn” claim 15. That is, on October 19, 2007, Applicants elected without traverse claims 1-15 and withdrew from consideration claim 16-43, but in so doing, inadvertently indicated that claim 15 was withdrawn from consideration. Accordingly, to correct this inadvertent oversight, Applicants have “un-withdrawn” claim 15 and are submitting claim 15 for consideration with claims 1-14.

The Objection To The Drawings

The drawings stand objected to under 37 C.F.R. § 1.83(a) as needed to show every feature of the invention specified in the claims.

Applicants have attached one (1) replacement sheet of drawings and one (1) new sheet of drawings. The replacement sheet of drawings includes changes to Figures 1 and 2. The changes to Figures 1 and 2 include the addition of the label “Prior Art.” The new sheet of drawings finds support throughout the specification, for example, at least in paragraph [20] of the originally filed patent application. Applicants respectfully submit that no new matter has been entered.

Consequently, Applicants respectfully request that the Examiner withdraw this objection.

The Rejection Under 35 U.S.C. § 103(a) Over Servi

Claim 1 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Servi et al. (Servi), U.S. Patent Application Publication No. 2004/0107400 A1.

Applicants respectfully traverse this rejection. Applicants respectfully submit that the subject matter according to claim 1 is patentable over Servi because the proffered modification

of Servi impermissibly changes the principle of Nishida. Moreover, Applicants respectfully submit that the proffered line of reasoning for modifying Servi is not convincing.

“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). (See, also, MPEP §§ 706.02(j) and 2144.)

Applicants respectfully submit that the Examiner admits Servi does not disclose a method for protecting data comprising associating n data information disk sectors with c redundancy information disk sectors, such that the c redundancy information disk sectors are based on the n data information disk sectors, and n and c are integer value numbers greater than zero. (See Office Action dated January 10, 2008, page 5, line 11.) Moreover, in the present instance, the Examiner does not state that Servi expressly or impliedly suggests the claimed subject matter. Consequently, in order to support the present rejection, the Examiner’s line of reasoning must be convincing as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

The Examiner asserts that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to keep the parity data or [sic] Servi in dedicated disk sectors (as opposed to "tracks" or "blocks") since (1) sectors were a well recognized disk partition size at the time of the invention and (2) the Servi system utilized disks.” (See Office Action dated January 10, 2008, page 5, lines 12-15.) Applicants respectfully submit that the Examiner’s assertion that “it would have been obvious” ignores the fact that Servi teaches away from subject matter of claim 1. According to Servi, the parity points in a bipartite graph are selected to have a degree distribution with very few (and preferable no) low degree parity points. (See Servi, paragraphs [0038]-[0040], and [0066].) Further, Servi discloses that for a parity set of a given size, it has been appreciated that better performance can be achieved by allocating parity points to have a relatively higher degree. (See Servi, paragraph [0066].)

Servi also discloses one embodiment that “enables a user to specify the number of bits in the data set, as well as the maximum number of parity bits that the user is willing to support.” (See Servi, paragraph [0073].) In this regard, Servi discloses that Tables 5-8 may be used as a

guide for selecting appropriate values. (See Servi, paragraph [0077].) Tables 5-8 show that to achieve a relatively small expected percentage loss of data bits, parity points having a relatively high degree should be used. For example, in Table 5, for a 1 % expected loss for a data set of 5040 bits, the parity degree of the parity bits should range from 160 to 200. According to Servi, the number of parity bits for this particular percentage loss is 130 bits. For an expected 10 % loss of 5040 data bits, the parity degree of the parity bits should be range from 18 to 25 bits. The number of parity bits for an expected 10 % lost of data bits is 860. Tables 6-8 show similar information.

Thus, Applicants respectfully submit that any of the techniques disclosed by Servi to generate parity bits for a selected number of data bits does not yield c redundancy information disk sectors that are based on n data information disk sectors such that n and c are integer value numbers greater than zero. Moreover, Applicants respectfully submit that a person of ordinary skill in the art would simply not use or modify the Servi technique to obtain the subject matter of claim 1 because in order to use or modify Servi to be the subject matter of claim 1, common sense dictates that the high expected percentage loss of data bits would be plainly unacceptable.

In the last response, Applicants respectfully invited the Examiner to use the disclosed Servi techniques (i.e., Tables 1 and/or 4 and Tables 5-8) for generating parity bits based on a specified number of data bits such that c redundancy information disk sectors are generated based on n data information disk sectors, and such that n and c are integer value numbers greater than zero. The Examiner responded by stating,

“[w]ith regard to applicant's charge of ‘unsupported allegations’, however, applicant's remarks are not commensurate in scope with the language of the claims. For example, in the case when $c=1$, any RAID system that has any parity in it whatsoever would teach claim 1; in the case where $n=c$, any RAID 5 or RAID 6 system would teach the claim 1; etc.”

Applicants respectfully submit that “applicant’s remarks” are commensurate in scope with the language of the claims. In particular, Applicants have demonstrated that using any of the techniques disclosed by Servi to generate parity bits for a selected number of data bits does not yield c redundancy information disk sectors that are based on n data information disk sectors such that n and c are integer value numbers greater than zero, a feature of claim 1. For example, considering ten (10) disk sectors, each having a disk sector size of 512 bits would result in 5120

bits (an integer value). If the Servi example in Table 5 of 5040 bits are scaled to the ten disk sectors of 5120 bits (i.e., a scale factor of approximately 1.0159, none of the number of parity bits for the exemplary percentage losses (i.e., 1 %, 10 %, 20 %, 50%, and 75 % losses) scale to be an integer value. Moreover, the Examiner has not used any of the disclosed Servi techniques (i.e., Tables 1 and/or 4 and Tables 5-8) for generating parity bits based on a specified number of data bits such that c redundancy information disk sectors are generated based on n data information disk sectors, and such that n and c are integer value numbers greater than zero. It is also notable that the Examiner has not rebutted Applicant's demonstration using any of the techniques disclosed by Servi to generate parity bits for a selected number of data bits does not yield c redundancy information disk sectors that are based on n data information disk sectors such that n and c are integer value numbers greater than zero.

Further, for the Examiner's example of the case when $c = 1$, Applicants respectfully submit that, contrary to the Examiner's assertion that "any RAID system that has any parity in it whatsoever would teach claim 1," no RAID system teaches claim 1. In particular, both a RAID 0 system and a RAID 1 system do not use parity. A RAID 2 system utilizes ECC disks on which a Hamming Code is written for each data word on a separate data disk. Both a RAID 3 system and a RAID 4 system utilize a dedicated disk for parity. A RAID 5 system utilizes parity distributed among the disks of the RAID system, but the parity for a data set is not written to the same disks in which the data set is written. A RAID 6 system utilizes dual parity distributed among the disks of the RAID system, but the dual parity for a data set is not written to the same disks in which the data set is written. Thus, Applicants respectfully submit that none of the RAID systems to which the Examiner refers writes the n data information disk sectors with c redundancy information disk sectors on the same storage unit.

Thus, Applicants respectfully submit that the Examiner has not demonstrated (1) that the disclosed Servi techniques (i.e., Tables 1 and/or 4 and Tables 5-8) can be used for generating parity bits based on a specified number of data bits such that c redundancy information disk sectors are generated based on n data information disk sectors, and such that n and c are integer value numbers greater than zero, and (2) that the Examiner's statement that "any RAID system that has any parity in it whatsoever would teach claim 1" is without basis. Further, Applicants respectfully note that the stated rejection of claim 1 is not based on "any RAID system that has any parity in it whatsoever," but is based on Servi. Accordingly, Applicants respectfully traverse

the Examiner assertion that “any RAID system that has any parity in it whatsoever would teach claim 1,” and the Examiner is respectfully invited to provide support for the Examiner’s assertion.

Further still, it is respectfully noted that the Examiner’s “modification” of the disclosed Servi technique (i.e., Tables 1 and/or 4 and Tables 5-8) to arrive at the claimed subject matter of claim 1 changes the principle of operation of Servi. That is, in order to modify Servi to become the subject matter of claim 1, the Servi disclosure must be ignored, thereby changing the principle of operation of Servi. Applicants respectfully submit that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). (See, also, MPEP § 2143.01.)

Further, Applicants respectfully submit that the Examiner’s proffered reasoning for modifying Servi is the mere assertion that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to keep the parity data or [sic] Servi in dedicated disk sectors (as opposed to “tracks” or “blocks”) since (1) sectors were a well recognized disk partition size at the time of the invention and (2) the Servi system utilized disks.” (See Office Action dated January 10, 2008, page 5, lines 12-15.) Applicants respectfully submit that the proffered line of reasoning is nothing more than a conclusory statement without support. “Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness,” See *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) (cited with approval in KSR). As such, Applicants respectfully submit that the Examiner’s line of reasoning for modifying Servi is not convincing because the Examiner has not provided a rational underpinning to support the proffered line of reasoning.

Accordingly Applicants respectfully submit that it is only by impermissible hindsight that the Examiner is able to reject claim 1 based on the modification of Servi. The Examiner does not state that Servi expressly or impliedly suggest the claimed subject matter. Moreover, the Examiner improperly modifies the principle of operation of Servi to arrive at the claimed subject matter. Further, Applicants respectfully submit that the proffered motivation for modifying Servi is a conclusory statement without any rational underpinning to support the line of reasoning. It is

only by using Applicant's disclosure as a template that the Examiner is able to select particular features of Servi through a hindsight reconstruction of Applicant's claims to make the rejection.

Consequently, Applicants respectfully request that the Examiner withdraw this rejection and allow claim 1.

The Rejection Under 35 U.S.C. § 103(a) Over Servi In View of Kaneda

Claims 3, 8, 9, 13 and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Servi in view of Kaneda et al. (Kaneda), U.S. Patent No. 5,958,067.

Applicants respectfully traverse this rejection. Applicants respectfully submits that the subject matter of any of claims 3, 8, 9, 13 and 14 is patentable over Servi in view of Kaneda because Kaneda does not cure the deficiencies of Servi with respect to claim 1, the base claim for each of claims 3, 8, 9, 13 and 14. In particular, Applicants respectfully submit that Kaneda does not cure the Examiner's impermissible change of operation of Servi, and Kaneda does not cure the Examiner's unconvincing line of reasoning for modifying Servi.

Consequently, Applicants respectfully request that the Examiner withdraw this rejection and allow claims 3, 8, 9, 13 and 13.

The Rejection Under 35 U.S.C. § 103(a) Over Servi In View of Hetzler

Claims 2, 4-7 and 10-12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Servi in view of Hetzler et al. (Hetzler), U.S. Patent Application Publication No. 2005/0015700 A1.

Applicants respectfully traverse this rejection. Applicants respectfully submits that the subject matter of any of claims 2, 4-7 and 10-12 is patentable over Servi in view of Hetzler because Hetzler does not cure the deficiencies of Servi with respect to claim 1, the base claim for each of claims 2, 4-7 and 10-12. In particular, Applicants respectfully submit that Hetzler does not cure the Examiner's impermissible change of operation of Servi, and Hetzler does not cure the Examiner's unconvincing line of reasoning for modifying Servi.

Consequently, Applicants respectfully request that the Examiner withdraw this rejection and allow claims 3, 8, 9, 13 and 13.

Claim 15

Applicants have "un-withdrawn" claim 15. Applicants respectfully submit that claim 15, which incorporates the features of claim 1, is patentable over the applied art for at least the same reasons that claim 1 is considered to be patentable over the applied art.

Consequently, Applicants respectfully request that the Examiner allow claim 15.

Applicants note that additional patentable distinctions between Servi, Kaneda and Hetzler and the rejected claims exist; however, the foregoing is believed sufficient to address the Examiner's rejections. Additionally, failure of Applicants to respond to a position taken by the Examiner is not an indication of acceptance or acquiescence of the Examiner's position. Instead, it is believed that the Examiner's positions are rendered moot by the foregoing and, therefore, it is believed not necessary to respond to every position taken by the Examiner with which Applicants do not agree.

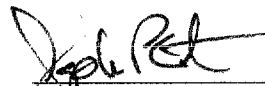
CONCLUSION

In view of the above amendments and arguments, it is urged that the present application is now in condition for allowance. Should the Examiner find that a telephonic or personal interview would expedite passage to issue of the present application, the Examiner is encouraged to contact the undersigned attorney at the telephone number indicated below.

It is requested that this application be passed to issue with claims 1-15.

Respectfully submitted,

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